

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims:

1. (Previously Presented) A method of controlling the migration of particulates in a well bore comprising the steps of:
 - (a) hydrajetting at least one slot into a zone along a well bore;
 - (b) placing a consolidation material comprising proppant particulates into the slot;
 - (c) placing an expandable screen in the well bore, the expandable screen having at least a plurality of openings, and the size of at least one of the openings is smaller than the average size of the proppant particulates; and
 - (d) expanding at least a portion of the expandable screen in the well bore relative to the walls of the well bore.
2. (Previously Presented) The method of claim 1 further comprising the step of, after step (d):
 - (e) allowing the expandable screen to prevent the migration of at least one proppant particulate into the well bore.
3. (Original) The method of claim 1 wherein the consolidation material comprises a resin.
4. (Original) The method of claim 3 wherein the resin consolidation material comprises a hardenable resin component comprising a hardenable resin and a hardening agent component comprising a liquid hardening agent, a silane coupling agent, and a surfactant.
5. (Previously Presented) The method of claim 4 wherein the hardenable resin in the liquid hardenable resin component is an organic resin selected from the group consisting of bisphenol A-epichlorohydrin resin, polyepoxide resin, novolak resin, polyester resin, phenol-aldehyde resin, urea-aldehyde resin, furan resin, urethane resin, glycidyl ethers, and mixtures thereof.
6. (Previously Presented) The method of claim 4 wherein the liquid hardening agent in the liquid hardening agent component is selected from the group consisting of amines, aromatic amines, aliphatic amines, cyclo-aliphatic amines, piperidine, triethylamine,

benzyldimethylamine, N,N-dimethylaminopyridine, 2-(N₂N-dimethylaminomethyl)phenol, tris(dimethylaminomethyl)phenol, and mixtures thereof.

7. (Previously Presented) The method of claim 4 wherein the silane coupling agent in the liquid hardening agent component is selected from the group consisting of N-2-(aminoethyl)-3-aminopropyltrimethoxysilane, 3-glycidoxypolypropyltrimethoxysilane, n-beta-(aminoethyl)-gamma-aminopropyl trimethoxysilane , and mixtures thereof.

8. (Previously Presented) The method of claim 4 wherein the surfactant in the liquid hardening agent component is selected from the group consisting of ethoxylated nonyl phenol phosphate ester, mixtures of one or more cationic surfactants, a C₁₂ – C₂₂ alkyl phosphonate surfactant, one or more non-ionic surfactants and an alkyl phosphonate surfactant, and mixtures thereof.

9. (Previously Presented) The method of claim 4 wherein the resin consolidation material is a furan-based resin selected from the group consisting of furfuryl alcohols, mixtures of furfuryl alcohol with an aldehyde, mixtures of furan resin and phenolic resin , and mixtures thereof.

10. (Previously Presented) The method of claim 4 further comprising a solvent selected from the group consisting of 2-butoxy ethanol, butyl acetate, furfuryl acetate, and mixtures thereof.

11. (Previously Presented) The method of claim 3 wherein the resin consolidation material is a phenolic-based resin selected from the group consisting of terpolymers of phenol, phenolic formaldehyde resin, mixtures of phenolic and furan resin, and mixtures thereof.

12. (Previously Presented) The method of claim 11 further comprising a solvent selected from the group consisting of butyl acetate, butyl lactate, furfuryl acetate, 2-butoxy ethanol, and mixtures thereof.

13. (Previously Presented) The method of claim 3 wherein the resin consolidation material is a HT epoxy-based resin selected from the group consisting of bisphenol A-epichlorohydrin resin, polyepoxide resin, novolac resin, polyester resin, glycidyl ethers, and mixtures thereof.

14. (Previously Presented) The method of claim 13 further comprising a solvent selected from the group consisting of dimethyl sulfoxide, dimethyl formamide, dipropylene glycol methyl ether, dipropylene glycol dimethyl ether, dimethyl formamide, diethylene glycol

methyl ether, ethylene glycol butyl ether, diethylene glycol butyl ether, propylene carbonate, d-limonene, fatty acid methyl esters, and mixtures thereof.

15. (Original) The method of claim 1 wherein the consolidation material comprises a tackifying material.

16. (Previously Presented) The method of claim 15 wherein the tackifying material is selected from the group consisting of polyamides, polyesters, polycarbonates, polycarbamates, natural resins, and combinations thereof.

17. (Previously Presented) The method of claim 1 wherein the well bore comprises a cased well bore.

18. (Cancelled)

19. (Previously Presented) The method of claim 1 wherein the well bore comprises an uncased well bore.

20. (Previously Presented) The method of claim 19 wherein the size of at least one of the openings in the expandable screen is smaller than both the average size of the proppant particulates and the average size of the formation sands.

21. (Previously Presented) A method of controlling the migration of particulates in a well bore comprising the steps of:

- (a) hydrajetting at least one slot into the zone along the well bore;
- (b) placing a consolidation material comprising proppant particulates into the slot;
- (c) placing an expandable screen in the well bore, the expandable screen having at least a plurality of openings;
- (d) expanding at least a portion of the expandable screen in the well bore relative to the walls of the well bore; and
- (e) allowing the expandable screen to prevent the migration of at least one proppant particulate into the well bore.

22. (Cancelled)

23. (Original) The method of claim 21 wherein the consolidation material comprises a resin.

24. (Original) The method of claim 23 wherein the resin consolidation material comprises a hardenable resin component comprising a hardenable resin and a hardening agent component comprising a liquid hardening agent, a silane coupling agent, and a surfactant.

25. (Previously Presented) The method of claim 24 wherein the hardenable resin in the liquid hardenable resin component is an organic resin selected from the group consisting of bisphenol A-epichlorohydrin resin, polyepoxide resin, novolak resin, polyester resin, phenol-aldehyde resin, urea-aldehyde resin, furan resin, urethane resin, glycidyl ethers, and mixtures thereof.

26. (Previously Presented) The method of claim 24 wherein the liquid hardening agent in the liquid hardening agent component is selected from the group consisting of amines, aromatic amines, aliphatic amines, cyclo-aliphatic amines, piperidine, triethylamine, benzylidimethylamine, N,N-dimethylaminopyridine, 2-(N₂N-dimethylaminomethyl)phenol, tris(dimethylaminomethyl)phenol, and mixtures thereof.

27. (Previously Presented) The method of claim 24 wherein the silane coupling agent in the liquid hardening agent component is selected from the group consisting of N-2-(aminoethyl)-3-aminopropyltrimethoxysilane, 3-glycidoxypropyltrimethoxysilane, n-beta-(aminoethyl)-gamma-aminopropyl trimethoxysilane ,and mixtures thereof.

28. (Previously Presented) The method of claim 24 wherein the surfactant in the liquid hardening agent component is selected from the group consisting of ethoxylated nonyl phenol phosphate ester, mixtures of one or more cationic surfactants, a C₁₂ – C₂₂ alkyl phosphonate surfactant, one or more non-ionic surfactants and an alkyl phosphonate surfactant, and mixtures thereof.

29. (Previously Presented) The method of claim 24 wherein the resin consolidation material is a furan-based resin selected from the group consisting of furfuryl alcohols, mixtures of furfuryl alcohol with an aldehyde, mixtures of furan resin and phenolic resin , and mixtures thereof.

30. (Previously Presented) The method of claim 24 further comprising a solvent selected from the group consisting of 2-butoxy ethanol, butyl acetate, furfuryl acetate, and mixtures thereof.

31. (Previously Presented) The method of claim 23 wherein the resin consolidation material is a phenolic-based resin selected from the group consisting of terpolymers of phenol, phenolic formaldehyde resin, mixtures of phenolic and furan resin, and mixtures thereof.

32. (Previously Presented) The method of claim 31 further comprising a solvent selected from the group consisting of butyl acetate, butyl lactate, furfuryl acetate, 2-butoxy ethanol, and mixtures thereof.

33. (Previously Presented) The method of claim 23 wherein the resin consolidation material is a HT epoxy-based resin selected from the group consisting of bisphenol A-epichlorohydrin resin, polyepoxide resin, novolac resin, polyester resin, glycidyl ethers, and mixtures thereof.

34. (Previously Presented) The method of claim 33 further comprising a solvent selected from the group consisting of dimethyl sulfoxide, dimethyl formamide, dipropylene glycol methyl ether, dipropylene glycol dimethyl ether, dimethyl formamide, diethylene glycol methyl ether, ethylene glycol butyl ether, diethylene glycol butyl ether, propylene carbonate, d-limonene, fatty acid methyl esters, and mixtures thereof.

35. (Original) The method of claim 21 wherein the consolidation material comprises a tackifying material.

36. (Previously Presented) The method of claim 35 wherein the tackifying material is selected from the group consisting of polyamides, polyesters, polycarbonates, polycarbamates, natural resins, and combinations thereof.

37. (Previously Presented) The method of claim 21 wherein the well bore comprises a cased well bore.

38. (Previously Presented) The method of claim 37 wherein the size of the openings in the expandable screen is smaller than the average size of the proppant particulates.

39. (Previously Presented) The method of claim 21 wherein the well bore comprises an uncased well bore.

40. (Previously Presented) The method of claim 39 wherein the size of the openings in the expandable screen is smaller than both the average size of the proppant particulates and the average size of the formation sands.